Adobe Digital Government Solutions

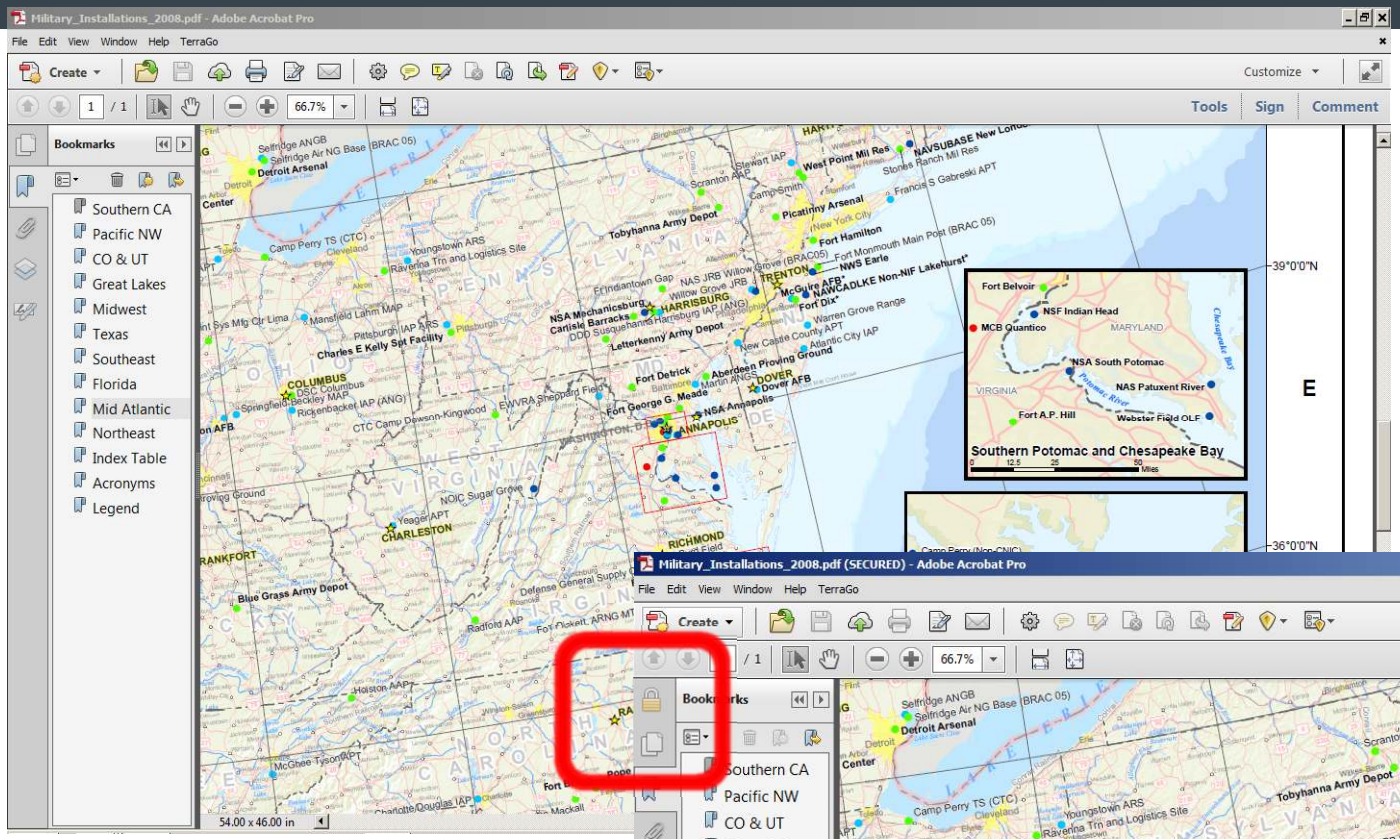
“Content-Centric Security" – A Three Dimensional Approach

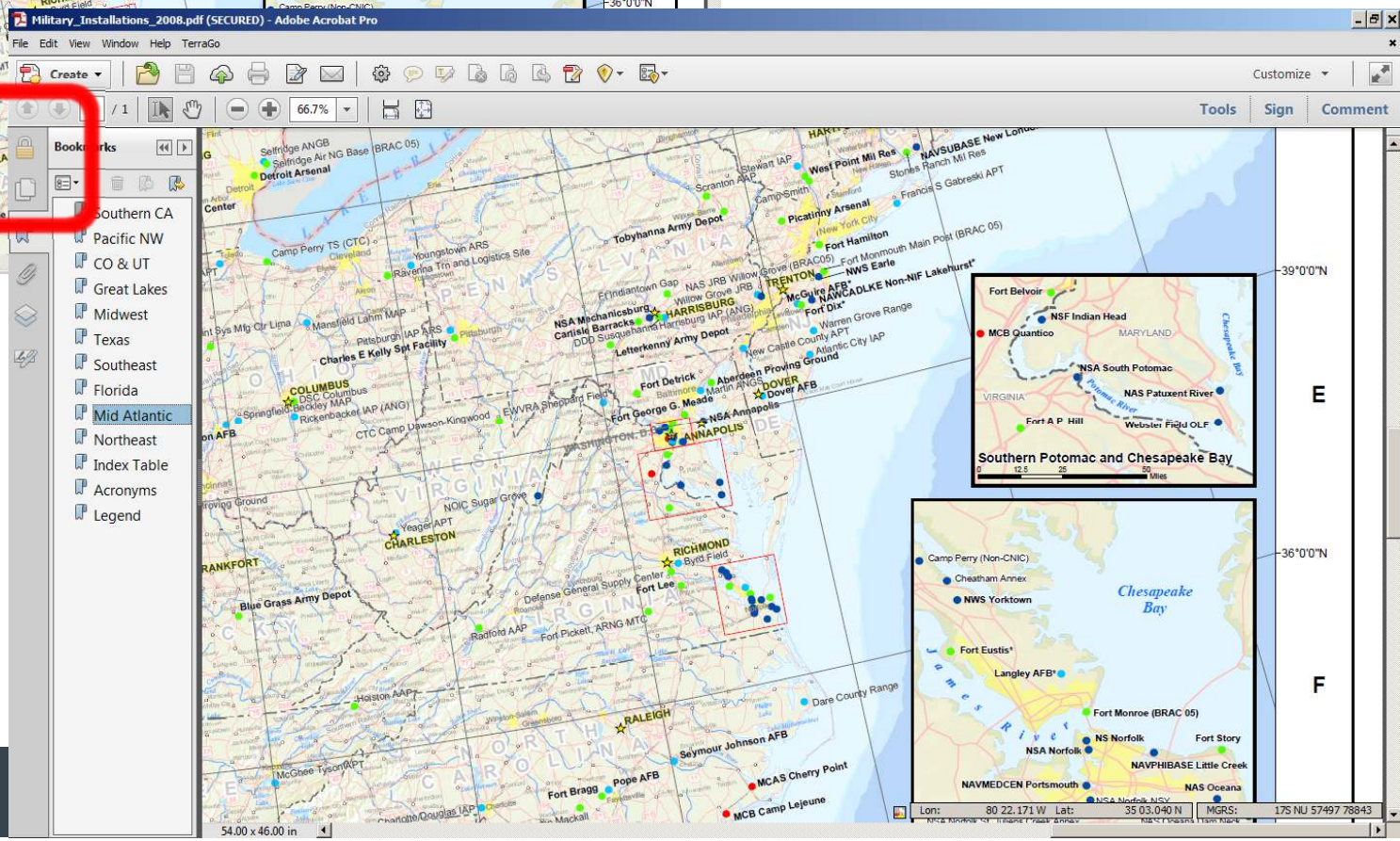
ADOBE

&

Make engaging content
Manage and secure assets
Mobilize across devices
Measure usage and experiences
CS6
eLS
Eg
Mu
Ps
Lc
DCO
HTML
PhoneGap
S7

Can you spot the difference between these GeoPDF's?





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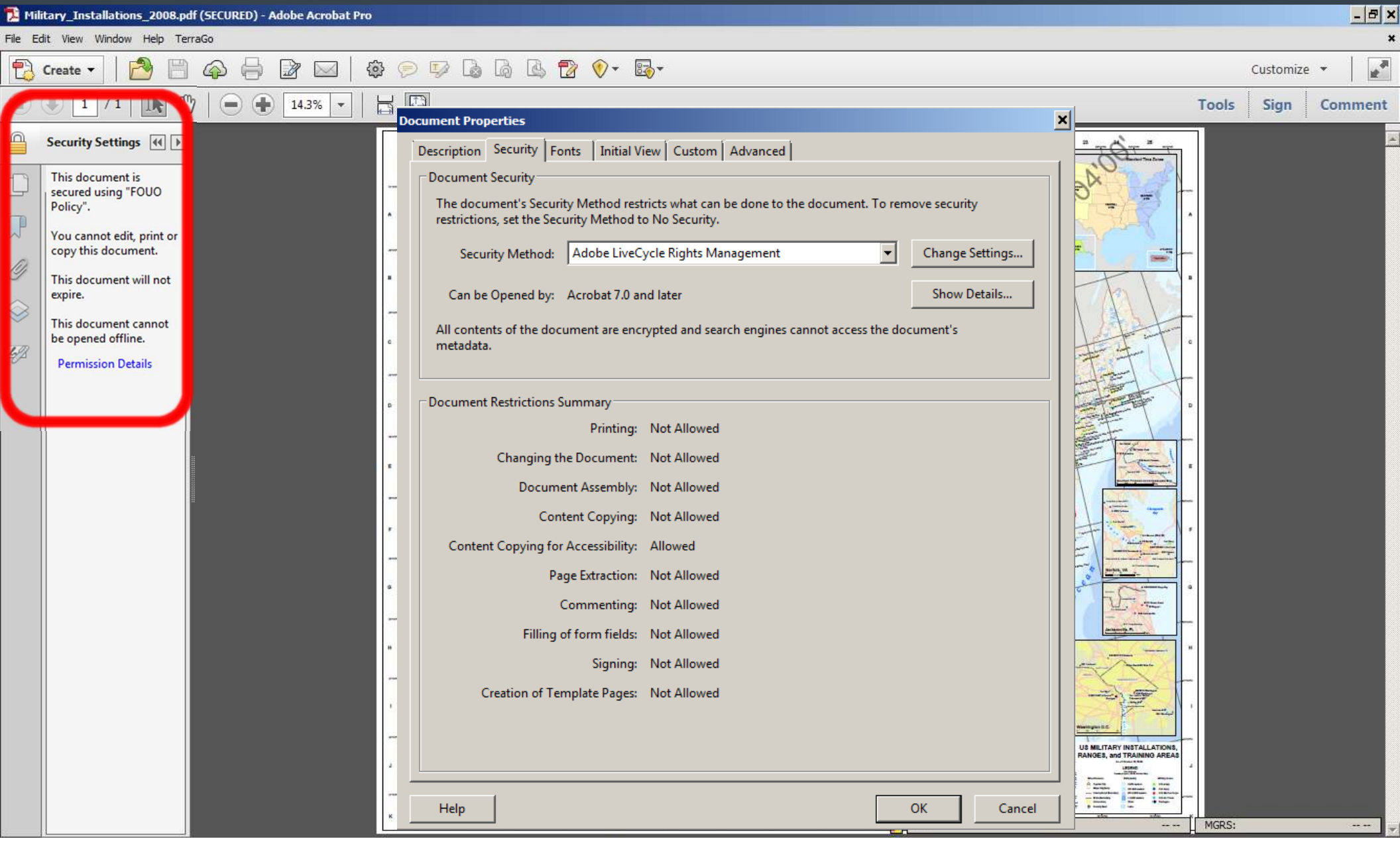


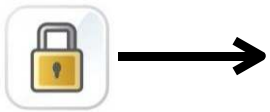
Context

- Accidents, malicious insiders, and cyberattacks are increasingly compromising sensitive information
  - National security, intellectual property, personally identifiable information
- Most deployed security technologies are not sufficient
  - *Independently* securing storage, transport, roles, and monitoring
- Industry has been developing and deploying content security in *three interconnected dimensions*
  - Content management + Rights Management + Content Analytics

Data Protection Challenges

Existing methods of network and storage security are still failing

Accidents. Insiders. Attacks



Author
Publisher

Server /
Portal
Repository
for
PII / IP / SBU /
Classified

Secure Transport
Strong Authentication
Device Encryption

Authorized
Recipient

Data Protection Challenges

Enforce Organizational Policy

News › World news › Israel

Israeli pilots jailed for storing sensitive maps on smartphones for convenience

Court martial gives two officers prison terms, 11 suspended prison terms and one a fine, Army Radio station reports

Reuters in Jerusalem
theguardian.com, Wednesday 5 February 2014 04.42 EST

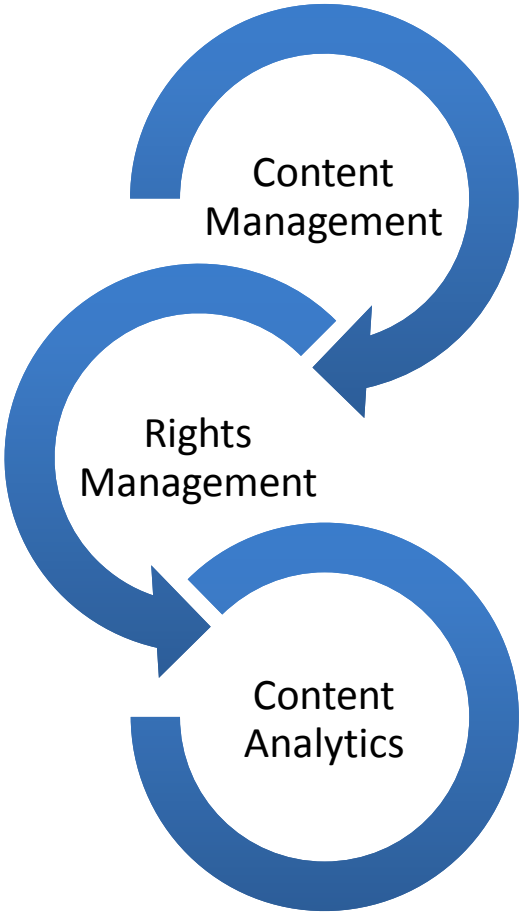
Mitigate Insider Threat

Restrict who & where

Version Control

Context – Three Interconnected Dimensions of Security

Developing and deploying content security in *three interconnected dimensions*



Good: Content Security in One Dimension

Content Management

- Strong Authentication – definitively identify users
- Metadata – classifications associated with content
- Role based access – who can access what content
- Audit logs – record of all user and admin events

Once sensitive content leaves the repository to an authenticated user, it can be accidentally or maliciously forwarded to unauthorized recipients!

Better: Content Security in Two Dimensions

- Strong Authentication – definitively identify users
- Metadata – classifications associated with content
- Role based access – who can access what content
- Audit logs – record of all user and admin events

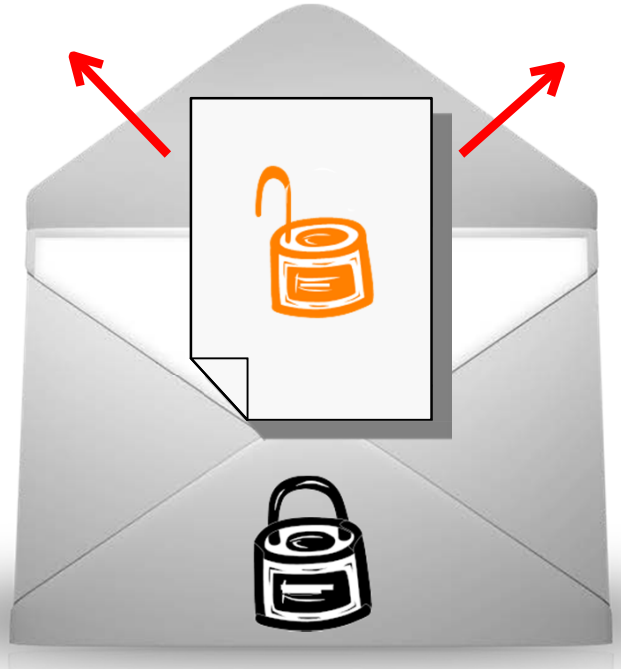
Content Management

Protection beyond repository – independent of any subsequent storage and transport

Rights Management

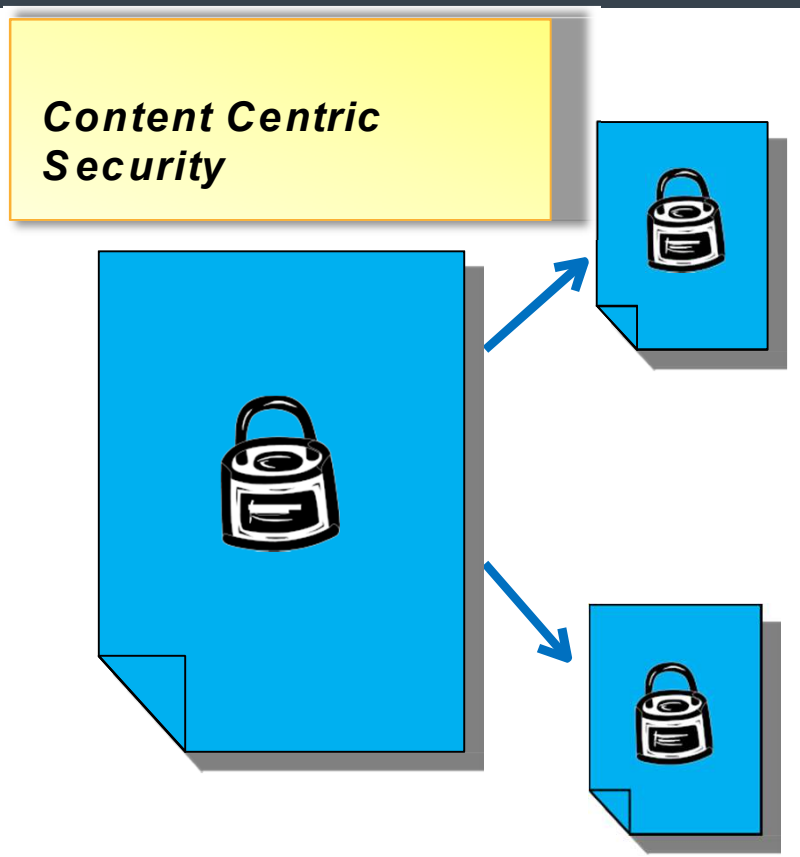
- Persistent protection – enforces access at file layer
- Permissions – restrict save, print, clipboard, modify
- Revocation – expire and terminate access after publishing
- Audit logs – record of all valid and invalid access

Enveloped Encryption vs. Content Centric Security



With traditional enveloped encryption, like device, S/MIME, PGP, or ZIP, the container is decrypted to produce the contents.

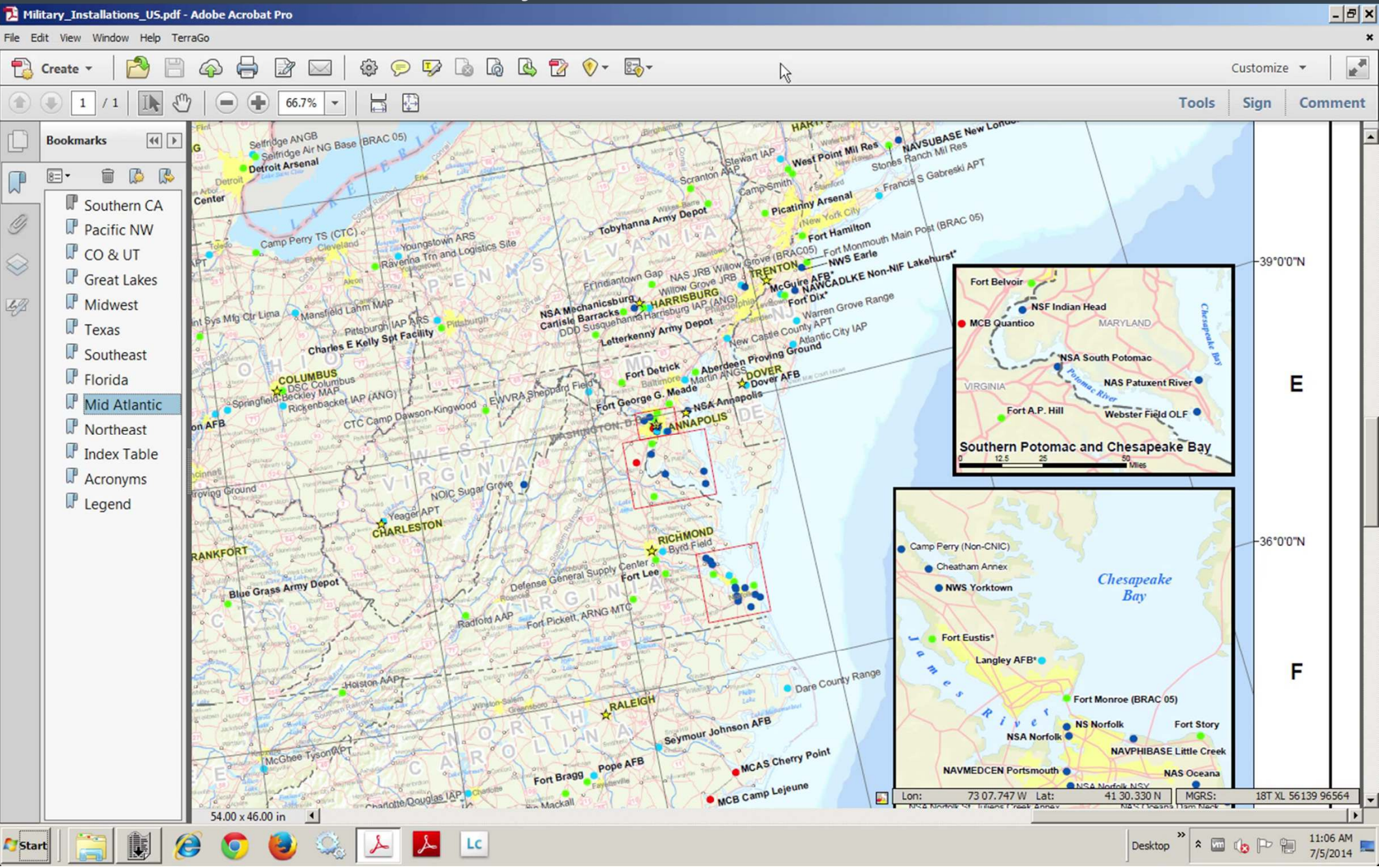
You can't protect where the decrypted contents subsequently go.



With internal document cryptography, there are no unprotected copies. The encryption is inside the native file format itself.

Wherever the document goes, it stays protected & monitored.

Content Centric Security



Best: Content Security in Three Dimensions

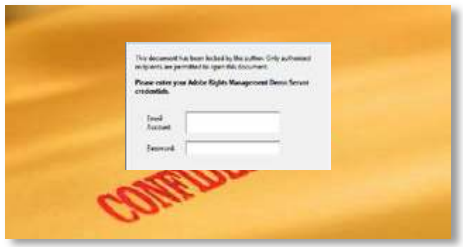
- Strong Authentication – definitively identify users
- Metadata – classifications associated with content
- Role based access – who can access what content
- Audit logs – record of all user and admin events

Content Management

Content Analytics

- Visualization – where documents are opened
- Anomalies – high download/open/print counts
- Affinity –associating users with content
- Realtime – immediately notify unusual activity

Rights Management



- Persistent protection – enforces access at file layer
- Permissions – restrict save, print, clipboard, modify
- Revocation – expire and terminate access after publishing
- Audit logs – record of all valid and invalid access

Auditing of rights management information

Description	User	Detail	Date ▼
Close Document	John Jacobs	4FE38361-60B0-102F-A1F0-0000C0A8C8CD	May 9, 2012 9:40:44 PM GMT-04:00
Print High Resolution	John Jacobs	4FE38361-60B0-102F-A1F0-0000C0A8C8CD	May 9, 2012 9:40:20 PM GMT-04:00
View Document	John Jacobs	4FE38361-60B0-102F-A1F0-0000C0A8C8CD	May 9, 2012 9:39:31 PM GMT-04:00

Event Detail

Event ID: 48C2FD7B-88EE-509C-5E9D-1A8242D92CC8

Description: Close Document

User ID: 624AAF4C-A911-102E-8C6A-0000C0A8C8CD

User: John Jacobs

Event Date: May 9, 2012 9:40:44 PM GMT-04:00

IP Address: 10.1.2.3

Document ID: 4FE38361-60B0-102F-A1F0-0000C0A8C8CD

Document Status: Online

Detailed usage analytics – users and content

Mobile Security – with DRM

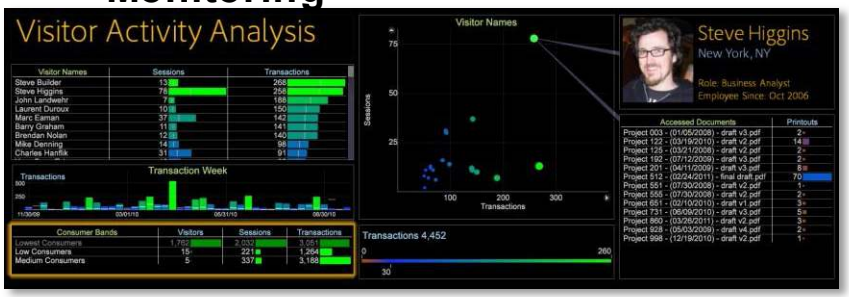
Now available on mobile devices – iPhone/iPad & Android

- With documents encrypted at document layer, exfiltration, accidents, and malicious insiders do not expose any sensitive information
- Documents can also be revoked, with no further access to decryption key
- Audit log of attempted access is also useful

Adobe and Information Assurance

Acrobat and Reader DOD JITC Certification

Analytics & Content Monitoring



Content Rights Management

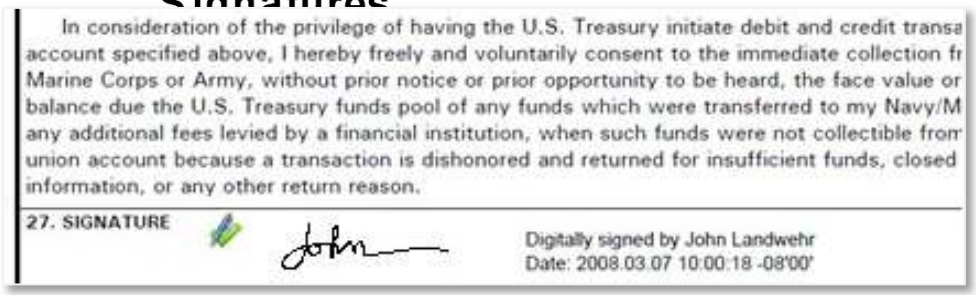
FIPS 140-2 crypto AES256, RSA4096, SHA2 and ECC PKI / CAC / PIV

Certified Documents

Collaboration

Secure Product

Electronic & Digital Signatures



Redaction / Sanitization

Adobe Government

because experience matters

Backup

Video Memo.pdf - Adobe Acrobat Pro

File Edit View Window Help

Create

1 / 1

50%

Tools Comment Share

Author experience (only two clicks!)

SENSITIVE INFORMATION

TO: ALL

FROM: HQ

This document utilizes rights management.

Capability	Detail for this document
Format	PDF with embedded Video
Authentication required	None / Anonymous
Permissions	Restricted: Edit/Print/clipboard
Visible watermark	Header
Server audit log	Enabled

Sensitive content would go here...

Pages

Content

Forms

Action Wizard

Recognize Text

Protection

Encrypt

1 MyPolicies:Public - View Only

2 MyPolicies:USG - Restricted Collaboration

3 MyPolicies:USG - View Only

Manage...

Remove

Apply Redactions

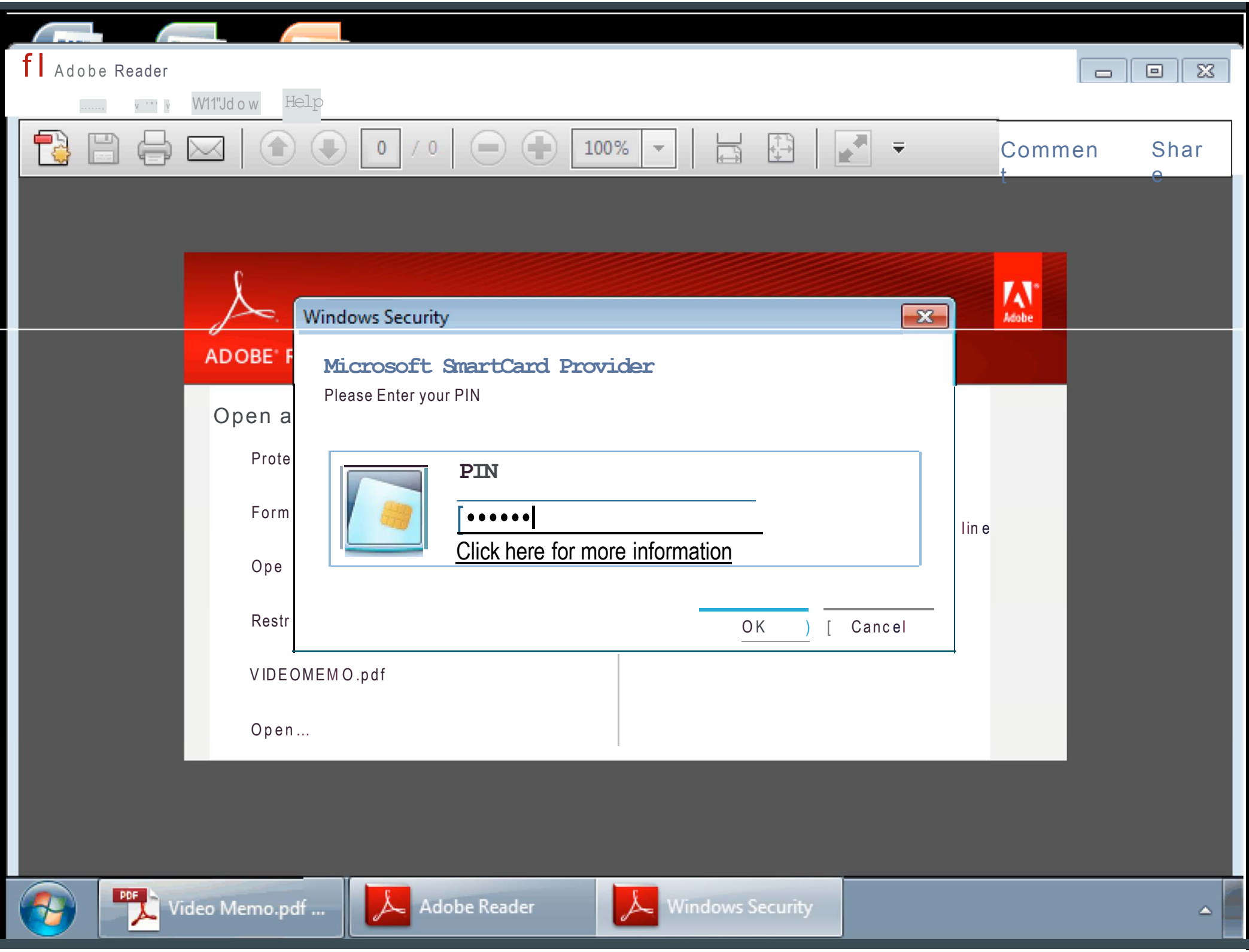
Redaction Properties

Search & Remove Text

Video Memo.pdf ...

Recipient experience
Microsoft Office Wo...
Microsoft Office Exc...
Microsoft Office Po...
Adobe Acrobat X Pro
Adobe Reader X
Content - Shortcut
Opening a protected document, restricted to USG users with their smartcard badge.
Restricted Memo.pdf
Open Memo.pdf
Form.pdf
Video Memo.pdf
Word DOC Memo.docx
Revoked Memo.pdf
NoAccess Memo.pdf
Video Memo.pdf ...

User Inserts CAC/PIV Badge into Card Reader


Adobe Reader
Help
0 / 0
100%
Comment
Share
Windows Security
Microsoft SmartCard Provider
Please Enter your PIN
PIN
Click here for more information
OK
Cancel
Open a
Prote
Form
Ope
Restr
VIDEOMEMO.pdf
Open...
Video Memo.pdf ...
Adobe Reader
Windows Security

Form.pdf (SECURED) - Adobe Reader

File Edit View Window Help

5 / 11 55.3% Comment Share

Security Settings

This document is secured using "USG - View Only".

You cannot edit, print or copy this document.

This document will not expire.

This document cannot be opened offline.

Permission Details

In addition to restricting “Open” access with USG smartcard, this document also restricts “EDIT”, “PRINT”, and “CLIPBOARD” operations

TO:

FROM:

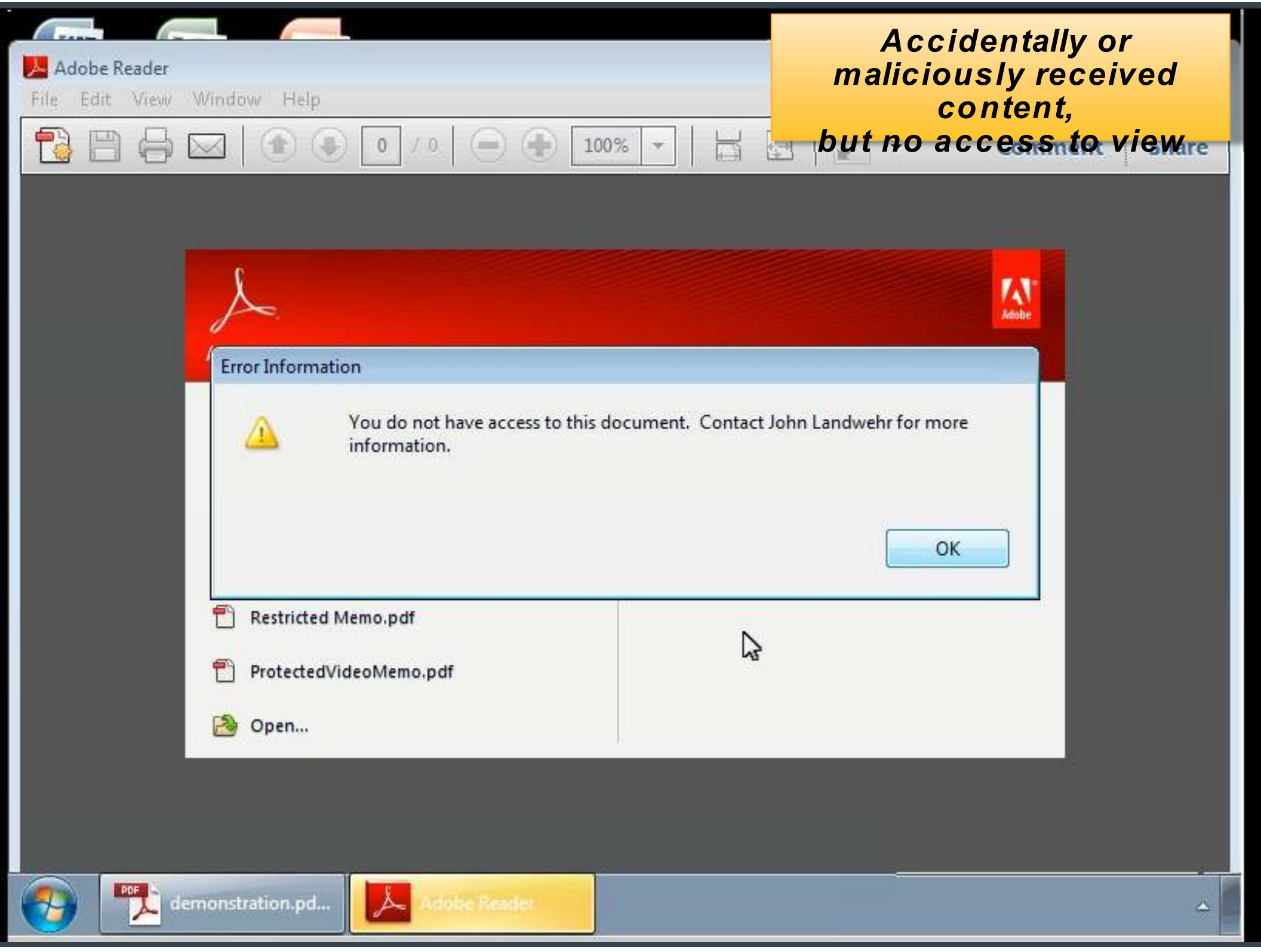
This docume

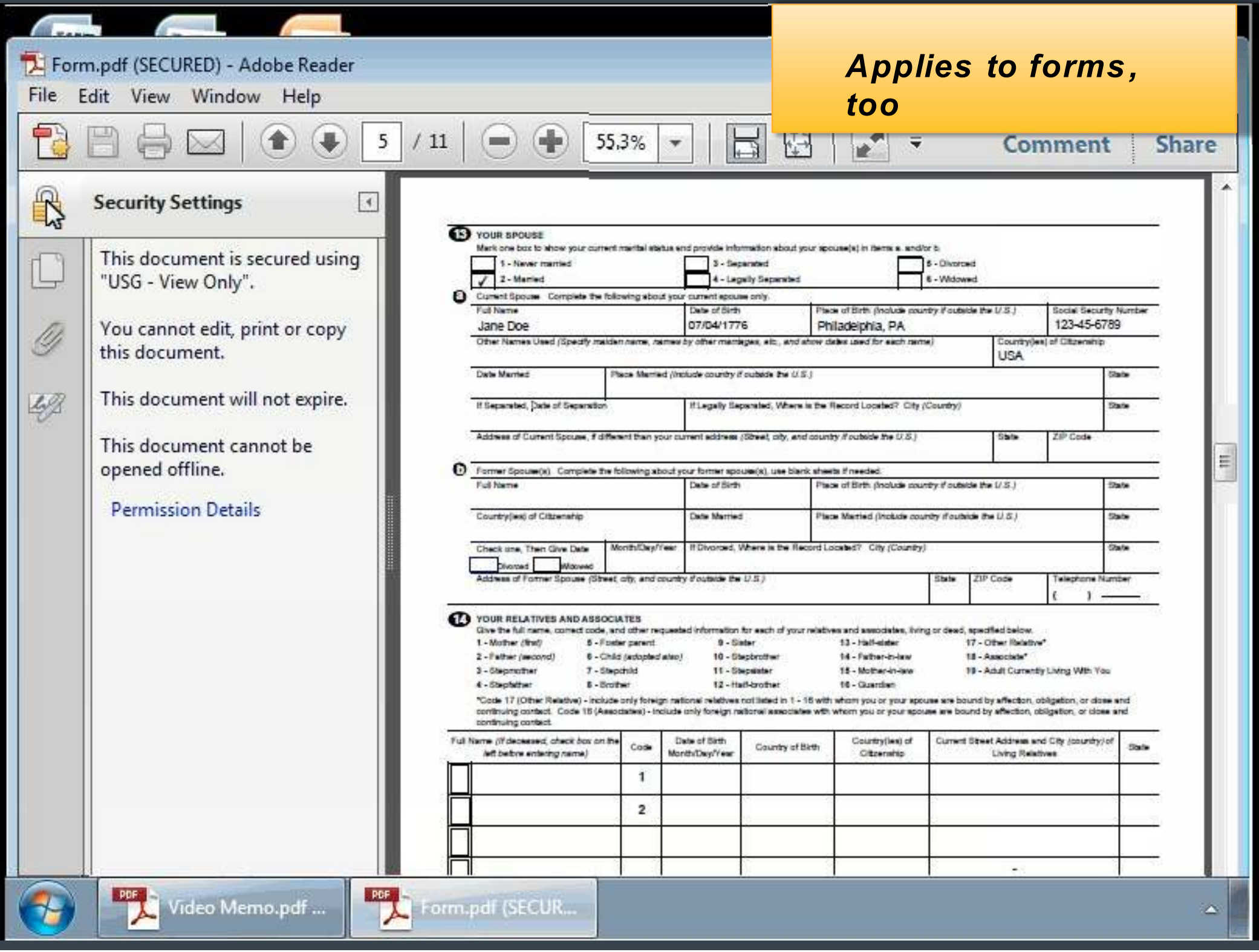
Capability	ment
Format	Video
Authentication required	None / Anonymous
Permissions	Restricted: Edit/Print/clipboard
Visible watermark	Header
Server audit log	Enabled

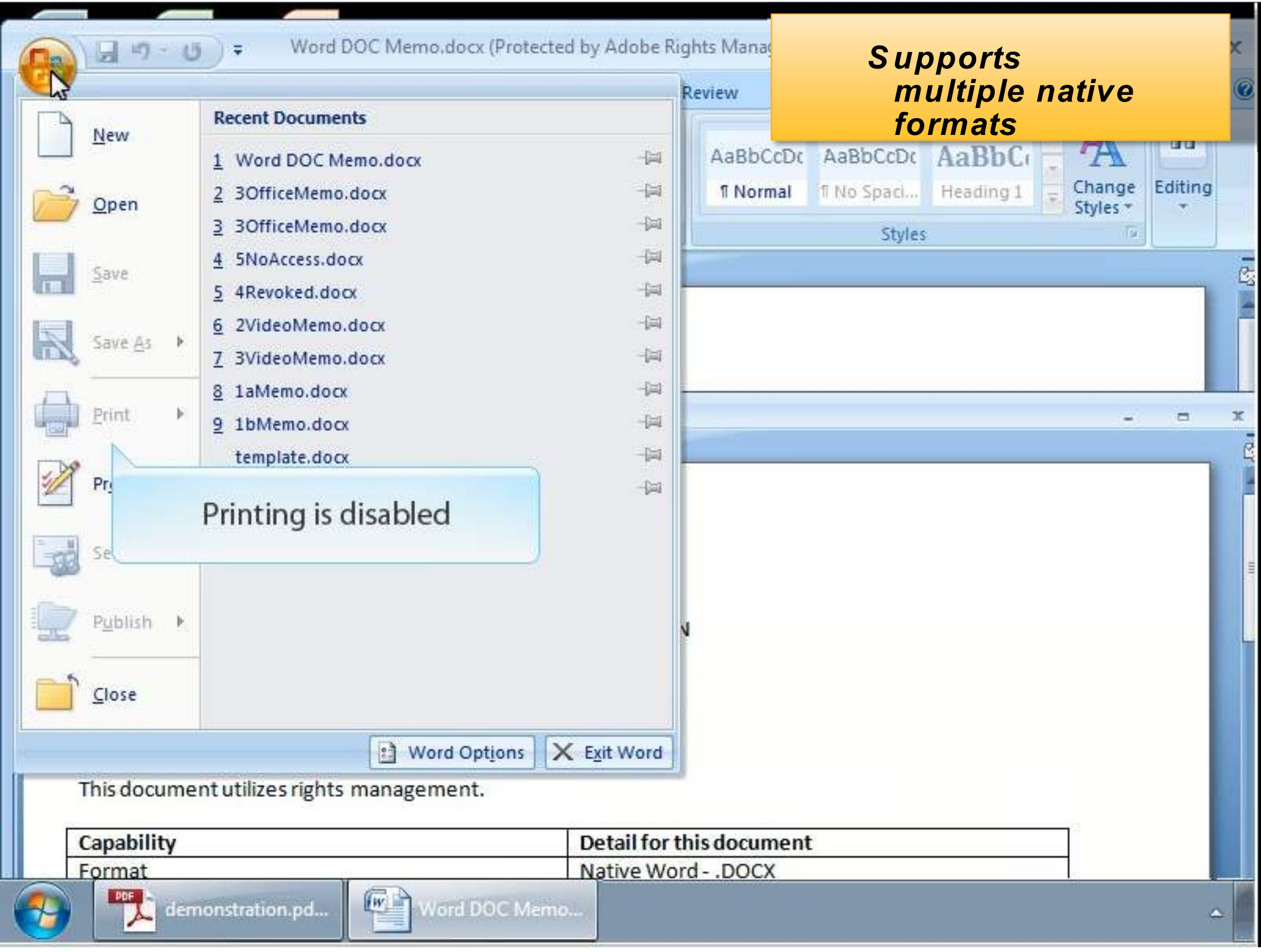
Sensitive content would go here...

Video Memo.pdf ...

Form.pdf (SECUR...


Accidentally or maliciously received content,
but no access to view
Adobe Reader
File Edit View Window Help
0 / 0
100%
Comment
Share
Error Information
You do not have access to this document. Contact John Landwehr for more information.
OK
Restricted Memo.pdf
ProtectedVideoMemo.pdf
Open...
demonstration.pd...
Adobe Reader


Form.pdf (SECURED) - Adobe Reader
File Edit View Window Help
5 / 11
55.3%
Comment
Share
Applies to forms, too
Security Settings
This document is secured using "USG - View Only".
You cannot edit, print or copy this document.
This document will not expire.
This document cannot be opened offline.
Permission Details
13 YOUR SPOUSE
Mark one box to show your current marital status and provide information about your spouse(s) in items a. and/or b.
1 - Never married
2 - Married
3 - Separated
4 - Legally Separated
5 - Divorced
6 - Widowed
a Current Spouse Complete the following about your current spouse only.
Full Name
Jane Doe
Date of Birth
07/04/1776
Place of Birth (Include country if outside the U.S.)
Philadelphia, PA
Social Security Number
123-45-6789
Other Names Used (Specify maiden name, names by other marriages, etc., and show dates used for each name)
Country(ies) of Citizenship
USA
Date Married
Place Married (Include country if outside the U.S.)
State
If Separated, Date of Separation
If Legally Separated, Where is the Record Located? City (Country)
State
Address of Current Spouse, if different than your current address (Street, city, and country if outside the U.S.)
State
ZIP Code
b Former Spouse(s) Complete the following about your former spouse(s), use blank sheets if needed.
Full Name
Date of Birth
Place of Birth (Include country if outside the U.S.)
State
Country(ies) of Citizenship
Date Married
Place Married (Include country if outside the U.S.)
State
Check one, Then Give Date
Divorced
Widowed
Month/Day/Year
If Divorced, Where is the Record Located? City (Country)
State
Address of Former Spouse (Street, city, and country if outside the U.S.)
State
ZIP Code
Telephone Number
( ) —
14 YOUR RELATIVES AND ASSOCIATES
Give the full name, correct code, and other requested information for each of your relatives and associates, living or dead, specified below.
1 - Mother (first)
2 - Father (second)
3 - Stepmother
4 - Stepfather
5 - Foster parent
6 - Child (adopted also)
7 - Stepchild
8 - Brother
9 - Sister
10 - Stepbrother
11 - Stepsister
12 - Half-brother
13 - Half-sister
14 - Father-in-law
15 - Mother-in-law
16 - Guardian
17 - Other Relative*
18 - Associate*
19 - Adult Currently Living With You
*Code 17 (Other Relative) - Include only foreign national relatives not listed in 1 - 16 with whom you or your spouse are bound by affection, obligation, or close and continuing contact. Code 18 (Associates) - Include only foreign national associates with whom you or your spouse are bound by affection, obligation, or close and continuing contact.
Full Name (If deceased, check box on the left before entering name)
Code
Date of Birth Month/Day/Year
Country of Birth
Country(ies) of Citizenship
Current Street Address and City (country) of Living Relatives
State
1
2
Video Memo.pdf ...
Form.pdf (SECUR...


Supports multiple native formats
Word DOC Memo.docx (Protected by Adobe Rights Manag
Review
New
Open
Save
Save As
Print
Publish
Close
Recent Documents
1 Word DOC Memo.docx
2 3OfficeMemo.docx
3 3OfficeMemo.docx
4 5NoAccess.docx
5 4Revoked.docx
6 2VideoMemo.docx
7 3VideoMemo.docx
8 1aMemo.docx
9 1bMemo.docx
template.docx
Printing is disabled
Word Options
Exit Word
AaBbCcDc ¶ Normal
AaBbCcDc ¶ No Spaci...
AaBbC Heading 1
Change Styles
Editing
Styles
This document utilizes rights management.
Capability
Detail for this document
Format
Native Word - .DOCX
demonstration.pd...
Word DOC Memo...

Recommended features to consider:

- Strong FIPS-140 encryption (AES 256)
- Cross-platform (Windows, Mac, iOS, Android)
- Multiformat (PDF, Office, CAD, custom)
- Ubiquitous viewer (e.g. Adobe Reader)
- Dynamic policy (change after publishing, including revocation)
- Detective controls (dynamic watermarking, detailed doc audit log)
- Continuous monitoring (advanced analytics)
- Automation ready (SharePoint, bulk automated encryption)
- Customization ready (client SDK, Server SPIs)
- Strong authentication sources (multi-domain LDAP, AD, SSO, PKI)